

**BEFORE THE DEPARTMENT OF  
NATURAL RESOURCES AND CONSERVATION  
OF THE STATE OF MONTANA**

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<b>APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 41K 30156171 ) BY GREENFIELDS IRRIGATION ) DISTRICT )</b>	<b>PRELIMINARY DETERMINATION TO GRANT PERMIT</b>
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On July 11, 2022, Greenfields Irrigation District (Applicant) submitted Application for Beneficial Water Use Permit No. 41K 30156171 to the Havre Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC) for a flow rate of 1,400 CFS and volume of 591,330.6 acre-feet (AF) for power generation use. The Department published receipt of the Application on its website. The Department sent Applicant a deficiency letter under § 85-2-302, Montana Code Annotated (MCA), dated October 17, 2022. The Applicant responded with information dated November 9, 2022. The Application was determined to be correct and complete as of December 14, 2022. The Department held a pre-application meeting with the manager of Greenfields Irrigation District on August 22, 2022. An Environmental Assessment for this Application was completed on March 29, 2023.

**INFORMATION**

The Department considered the following information submitted by the Applicant, which is contained in the administrative record.

Application as filed:

- Application for Beneficial Water Use Permit, Form 600
- Attachments
- Topographic and aerial maps depicting the general proposed project location
- Basin Closure Area Addendum, Form 600-BCA
- Criteria Addendum for appropriations greater than 5.5 cubic feet per second and 4,000 acre-feet, Form 600B

#### Information Received after Application Filed

- Deficiency Letter response from Applicant to DNRC dated October 17, 2022
- Additional information regarding adequacy of diversion works including preliminary construction drawings which show the proposed intake structure on the Pishkun Supply Canal, the parallel penstock, and the terminal powerhouse, received October 17, 2022
- Letter of Notification of Support and Assignment of Possessory Interest dated April 4, 2023, giving written consent to Greenfields Irrigation District for the purposes of hydropower generation on the Pishkun Supply Canal

#### Information within the Department's Possession/Knowledge

- Water right records for surrounding area
- Upper Missouri Water Availability Analysis, MT Dept. of Natural Resources and Conservation, December 1997
- Gibson Reservoir, Sun River Report for Water Years 1980 - 2021
- Department's Technical Report

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA).

### **PROPOSED APPROPRIATION**

#### FINDINGS OF FACT

1. The Applicant proposes to divert water from the Sun River, by means of a headgate located at Diversion Lake, from April 1st to October 31st inclusive of each year at 1,400 cubic feet per second (CFS) up to 591,330.6 AF, from a point in the NWSE of Section 36, Township (T) 22 N, Range (R) 9 W, Lewis and Clark County, for power generation use from April 1st to October 31st inclusive of each year. The place of use where the hydropower

(turbine) facility is to be located is the SWNW of Section 13, T22N, R8W Teton County and is commonly known as the Arnold Coulee Drop located on the Pishkun Supply Canal.

2. This proposed hydropower appropriation is associated with SOC's 41K 40870-00, 41K 40871-00 and 41K 40872-00 owned by the Bureau of Reclamation and Greenfields Irrigation District (BOR/GID, respectively). The common elements between the proposed appropriation and the existing appropriation are a shared point of diversion and means of conveyance through the Pishkun Supply Canal. There are no other users of the point of diversion, means of conveyance or place of use. The operation of the proposed appropriation is entirely dependent on the diversion schedule and operation of these three existing water rights as a condition of issuance of a beneficial water use permit by the Department as a result of this Application.

3. The U.S Bureau of Reclamation (BOR) operates the Sun River Project, composed of the Fort Shaw and Greenfield Divisions, in the Sun River drainage. The project was authorized by the Secretary of the Interior on February 26, 1906, in accordance with the act of June 17, 1902 (Ch. 1093, 32 Stat. 388, 43 U.S.C. 391). Principal features of the project are Gibson Dam and Reservoir, Willow Creek Dam and Reservoir, Pishkun Dikes and Reservoir, Sun River Diversion Dam, Fort Shaw Diversion Dam, and nine canal systems. In general, the project uses the waters of the Sun River and its tributaries, stored, and regulated by Gibson, Pishkun, and Willow Creek Reservoirs, for irrigating about 93,000 acres of land lying along the Sun River. Water stored in Gibson Reservoir is released into the Sun River for diversions downstream which includes water diverted into the Pishkun Supply Canal along with the Willow Creek Feeder Canal and the Fort Shaw Canal downstream. Water diverted into the Pishkun Supply Canal is the focus of this Application as the proposed hydropower use is subject to SOC's 41K 40870-00, 41K 40871-00 and 41K 40872-00. (Source: U.S. Department of Interior Website [http://www.usbr.gov/projects/Project.jsp?proj\\_Name=Sun+River+Project](http://www.usbr.gov/projects/Project.jsp?proj_Name=Sun+River+Project)). This Application seeks to appropriate water that is released by USBOR under its existing management operation of the Sun River Project. No additional water will be released to meet the proposed appropriation. As such, the proposed beneficial use is non-consumptive as that term is identified by the Upper Missouri River basin Closure pursuant to §85-2-342(2), MCA and further defined

by §85-2-102(19), MCA. Any consumption (*e.g., evaporation*) that occurs is accounted for under the Applicant's existing three water rights.

4. The proposed use is completely non-consumptive. The proposed power generation facility is located completely within the conveyance ditch for the three existing water rights. This conveyance ditch is commonly referred to as the Pishkun Supply Canal. As a result, the proposed hydropower use will result in no additional water consumption, nor will it be an additional legal demand as the new hydropower use will be subject to the following conditions, limitations, or restrictions:

5. The flow rate, volume and timing of water used for hydropower generation pursuant to this permit is secondary and entirely dependent on U.S. Bureau of Reclamation and Greenfields Irrigation District diversion of water for irrigation in accordance with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

6. The volume and flow rate for this permit are concurrent with the authorized flow rate and volume associated with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

7. The flow rate and volume for this permit does not authorize the diversion of water exceeding that amount of water necessary for Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

8. Basin Closure Information: This permit is subject to the condition that the timing and quantity of water available will be at the sole discretion of the U.S. Bureau of Reclamation and Greenfields Irrigation District in accordance with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00. Power generation may only occur as a result of the appropriation of water associated with 41K 40870-00, 41K 40871-00 and 41K 40872-00 for this use to be considered non-consumptive pursuant to §85-2-343 (2)(b), MCA.

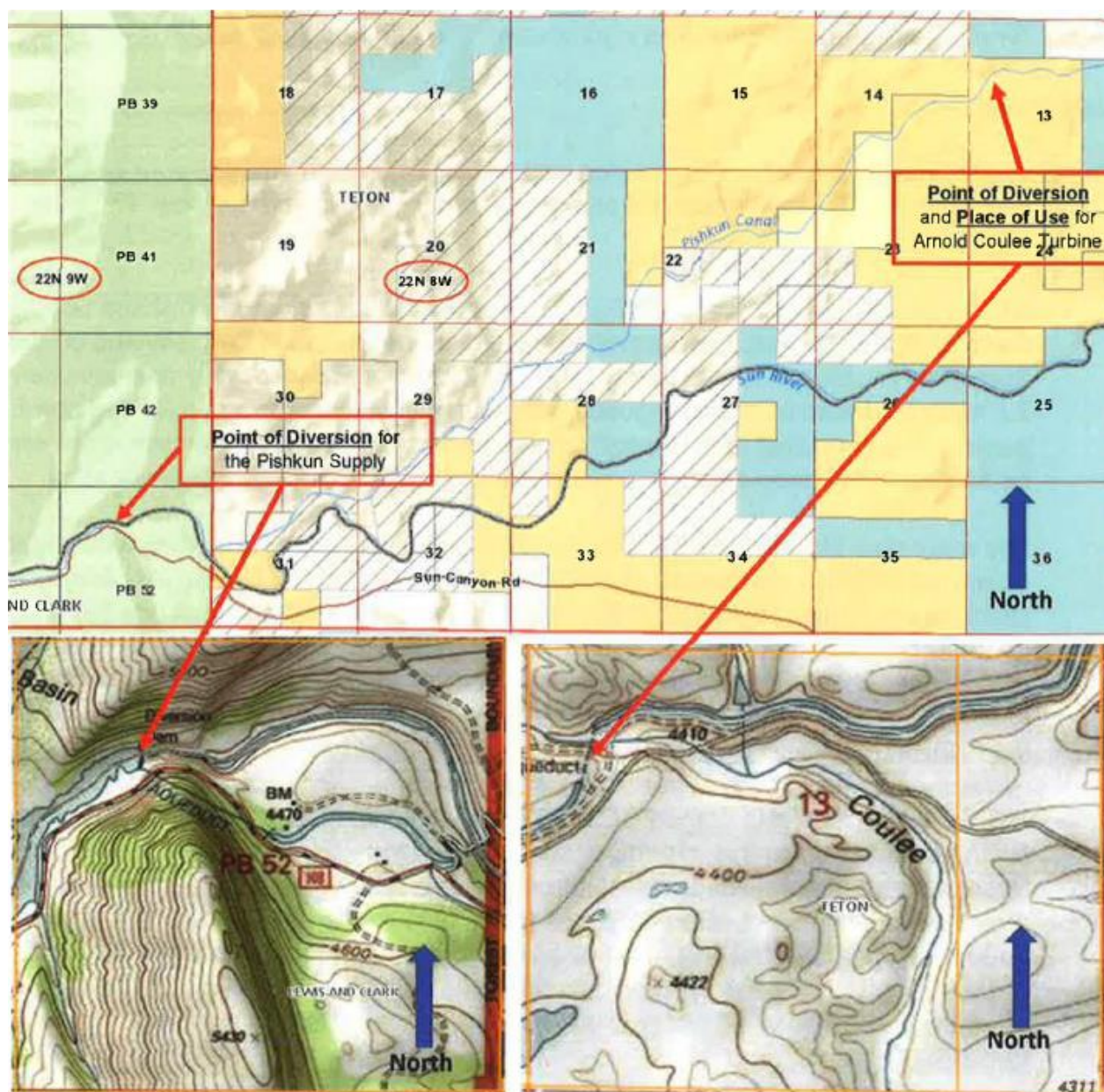


Figure 1: Location Map of the Proposed Hydropower Generation Place of Use

## BASIN CLOSURE

### FINDINGS OF FACT

9. This Application is for power generation use and is non-consumptive. This Application is located within the Upper Missouri River legislative basin closure, §§ 85-2-342 and 85-2-343, MCA.

### CONCLUSIONS OF LAW

10. DNRC cannot grant an application for a permit to appropriate water within the upper Missouri River basin until final decrees have been issued in accordance with Title 85, chapter 2, part 2, MCA, for all of the sub-basins of the upper Missouri River basin. § 85-2-343(1), MCA. The upper Missouri River basin consists of the drainage area of the Missouri River and its tributaries above Morony Dam. (§ 85-2-342(4), MCA).

11. This Application is for power generation, which is a non-consumptive use. The Application falls under the exceptions for the basin closure, 85-2-343, MCA. 85-2-343 (2)(b), MCA, allows for a permit application for a non-consumptive use.

12. In reviewing an application for groundwater in a closed basin, the District Court in Sitz Ranch v. DNRC observed:

The basin from which applicants wish to pump water is closed to further appropriations by the legislature. The tasks before an applicant to become eligible for an exception are daunting. The legislature set out the criteria discussed above (§85-2-311, MCA) and placed the burden of proof squarely on the applicant. The Supreme Court has instructed that those burdens are exacting. It is inescapable that an applicant to appropriate water in a closed basin must withstand strict scrutiny of each of the legislatively required factors.

Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7.

# A basin closure exception does not relieve the Department of analyzing § 85-2-311, MCA criteria. Qualification under a basin closure exception allows the Department to accept an application for processing. The Applicant must still prove the requisite criteria. E.g., In the Matter of Application for Beneficial Water Use Permit No. 41K-30043385 by Marc E. Lee

(DNRC Final Order 2011); *In the Matter of Application for Beneficial Water Use Permit No. 41K-30045713 by Nicholas D. Konen*, (DNRC Final Order 2011).

## **§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA**

### **GENERAL CONCLUSIONS OF LAW**

13. The Montana Constitution and Montana Water Use Act recognize the protection of senior appropriations while at the same time providing for the development and use of the waters of the state by the public. Mont. Const. Art. IX, §3; Mont. Code Ann. § 85-2-102; Montana Power Co. v. Carey, 211 Mont. 91, 96, 685 P.2d 336, 339 (1984) (the MWUA provides for the regulated development of water use in Montana through allowing for the new appropriation of water and protecting senior water rights from encroachment by junior appropriators).

14. Pursuant to § 85-2-302(1), MCA, except as provided in §§ 85-2-306 and 85-2-369, MCA, a person may not appropriate water or commence construction of diversion, impoundment, withdrawal, or related distribution works except by applying for and receiving a permit from the Department. See § 85-2-102(1), MCA.

15. Under this Preliminary Determination, the relevant permit criteria in Mont. Code Ann § 85-2-311 are:

the department shall issue a permit if the applicant proves by a preponderance of evidence that the following criteria are met:

(a) (i) there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate; and

(ii) water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:

(A) identification of physical water availability;

(B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and

(C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

(b) the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. In this subsection (1)(b), adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied. [The applicant is not required to prove a lack of adverse effect for any water right identified in a written consent to approval filed pursuant to subsection (9) in connection with a permit application.];

(c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;

(d) the proposed use of water is a beneficial use;

(e) the applicant has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use

16. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria:

(1) (a) The department may issue a permit for less than the amount of water requested but may not issue a permit for more water than is requested or than can be beneficially used without waste for the purpose stated in the application. The department may require modification of plans and specifications for the appropriation or related diversion or construction. The department may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to satisfy the criteria listed in 85-2-311 and subject to subsection (1)(b), and it may issue temporary or seasonal permits. A permit must be issued subject to existing rights and any final determination of those rights made under this chapter.

E.g., Montana Power Co. v. Carey (1984), 211 Mont. 91, 96, 685 P.2d 336, 339 (requirement to grant applications as applied for, would result in, “uncontrolled development of a valuable natural resource” which “contradicts the spirit and purpose underlying the Water Use Act.”); see also, In the Matter of Application for Beneficial Water Use Permit No. 65779-76M by Barbara



*L. Sowers* (DNRC Final Order 1988)(conditions in stipulations may be included if it further compliance with statutory criteria); *In the Matter of Application for Beneficial Water Use Permit No. 42M-80600 and Application for Change of Appropriation Water Right No. 42M-036242 by Donald H. Wyrick* (DNRC Final Order 1994); Admin. R. Mont. (ARM) 36.12.207.

17. The Montana Supreme Court further recognized in Matter of Beneficial Water Use Permit Numbers 66459-76L, Ciotti: 64988-G76L, Starnier (1996), 278 Mont. 50, 60-61, 923 P.2d 1073, 1079, 1080, *superseded by legislation on another issue*:

Nothing in that section [85-2-313], however, relieves an applicant of his burden to meet the statutory requirements of § 85-2-311, MCA, before DNRC may issue that provisional permit. Instead of resolving doubts in favor of appropriation, the Montana Water Use Act requires an applicant to make explicit statutory showings that there are unappropriated waters in the source of supply, that the water rights of a prior appropriator will not be adversely affected, and that the proposed use will not unreasonably interfere with a planned use for which water has been reserved.

See also, Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court,

*Memorandum and Order* (2011). The Supreme Court likewise explained that:

.... unambiguous language of the legislature promotes the understanding that the Water Use Act was designed to protect senior water rights holders from encroachment by junior appropriators adversely affecting those senior rights.

Montana Power Co., 211 Mont. at 97-98, 685 P.2d at 340; see also Mont. Const. art. IX §3(1).

18. This application proposes to use more than 5.5 CFS and 4000 AF per year. Accordingly, pursuant to § 85-2-311 (3), MCA, the Applicant must prove by clear and convincing evidence that the criteria in § 85-2-311(1), MCA as well as reasonable use criteria set forth in § 85-2-311(3), MCA are met. “Clear and convincing evidence” means evidence in which “there is no serious or substantial doubt about the correctness of the conclusions drawn from the evidence. It is more than a preponderance of evidence but less than beyond a reasonable doubt.” Czajkowski v. Meyers, 2007 MT 292, ¶43, 339 Mont. 503, ¶43, 172 P.3d 94, ¶43; Seltzer v. Morton, 2007 MT 62, ¶159, 336 Mont. 225, ¶159, 154 P.3d 561, ¶159.

## **Physical Availability**

### **FINDINGS OF FACT**

19. The Department utilized flow rate and volume records based on releases from Gibson Dam located three miles upstream of the point of diversion for the Pishkun Supply Canal. The releases are monitored and recorded by the Bureau of Reclamation at station “GIBR”. Tables 1 and 2 below show the analysis of physical water availability at the proposed point of diversion based on the median of the mean monthly flow release from Gibson Dam over the period from 1980 -2021. The analysis accounts for all water users between the BOR gage near Gibson Dam and the proposed point of diversion at Diversion Dam. Details of the calculation are included in the Application file.

Table 1.

FLOW RATE PHYSICALLY AVAILABLE (CFS)							
	Apr	May	Jun	Jul	Aug	Sep	Oct
Gibson Releases (median of mean)	400.0000	1998.0000	2790.0000	1493.0000	851.0000	319.0000	163.0000
Prior users between gage and POD	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044
<b>Physically available flow at POD</b>	<b>399.9956</b>	<b>1997.9956</b>	<b>2789.9956</b>	<b>1492.9956</b>	<b>850.9956</b>	<b>318.9956</b>	<b>162.9956</b>

Table 2.

VOLUME PHYSICALLY AVAILABLE (AF)							
	Apr	May	Jun	Jul	Aug	Sep	Oct
Gibson Releases (median of mean)	50,983.00	17,727.00	118,511.00	127,709.00	94,149.00	50,983.00	17,727.00
Prior users between gage and POD	0.27	0.26	0.27	0.26	0.27	0.27	0.26
<b>Physically available volume at POD</b>	<b>50982.73</b>	<b>17726.74</b>	<b>118510.73</b>	<b>127708.74</b>	<b>94148.73</b>	<b>50982.73</b>	<b>17726.74</b>

20. The Applicant seeks a permit to beneficially use a maximum flow rate of 1,400 CFS for a maximum volume of 591,330.6 AF for the period of April 1st to October 31st each year. The applicant's proposal does not require or authorize the diversion of water more than the amount diverted for irrigation pursuant to Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

21. The Department finds that the median flows during the months of May and June exceed the requested maximum flow rate of 1,400 CFS. The project can only utilize the requested 1,400 CFS due to design limitations of the hydropower generation facility. Therefore 1,400 CFS would be the maximum flow rate used for non-consumptive power generation. The volume of 591,330.6 AF of volume is calculated based on a continuous flow rate of 1,400 CFS over the 213-day period of use (213 days x 1,400 x 1.983 acre-feet per day).

22. The Department finds that in this case, the amount of water is physically available for the proposed hydropower use.

## CONCLUSIONS OF LAW

23. Pursuant to § 85-2-311(1)(a)(i) and (3), MCA, an applicant must prove by clear and convincing evidence that “there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate.”

24. The Applicant has proven by clear and convincing evidence that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. § 85-2-311(3), MCA. (FOF 19-22)

## Legal Availability:

## FINDINGS OF FACT

25. The proposed new use of water is in the Upper Missouri River Basin Closure area which includes the Sun River. The Department recognizes that the primary purpose of the basin closure is that existing legal demands are in excess of the amounts of water typically considered physically available on the source of supply, in this case the Sun River. Therefore, the Department finds that water is generally considered not to be legally available.

26. The primary reason for the Upper Missouri Closure is due to large hydropower water rights owned by NorthWestern Energy at several dams in the basin. The single largest water right owned by PPL, LLC is at Cochrane Dam near Great Falls (downstream of the Sun River and the proposed appropriation) at 10,000 CFS (SOC 41Q 94365 00).

27. According to a previous Department hydrologic study, stream flows greater than appropriations claimed by prior water rights in the Upper Missouri Basin, including the water rights now owned by NorthWestern Energy, generally occur upstream of Cochrane Dam in the following circumstances: 1) during very wet Aprils (10th percentile flow or at least one year in ten); 2) during average and above average months in May and June (50th percentile flow or at least 5 years in ten); and 3) during very wet months of July (10th percentile flow or at least one year in ten). Flows rarely occur above the water right legal demand during the other eight months from August through March (Upper Missouri Water Availability Analysis, MT Dept. of Natural Resources and Conservation, December 1997).

28. Under the unique circumstances in this proposal, there is no definable area of potential impact as a result of the proposed non-consumptive hydropower use. ARM 36.12.1705

29. The amount of water available downstream of the proposed point of diversion will not be altered or reduced by the proposed use as conditioned. The Department finds that the proposed permit does not add a new legal demand on the source as conditioned.

### CONCLUSIONS OF LAW

30. Pursuant to § 85-2-311(1)(a), MCA, an applicant must prove by a preponderance of the evidence that water is legally available during the period in which the applicant seeks to appropriate, in the amount requested based upon a comparative analysis of physical availability of water to the legal demands on the sources impacted by the proposed use. Determination of legal availability is determined using water right records and other evidence provided to the Department. See also ARM 36.12.1704 and 36.12.1705; Montana Power Co., 211 Mont. at 99, 685 P.2d at 340 (Permit granted to include only early irrigation season because no water legally available in late irrigation season).

31. In the present case, the evidence establishes that the hydropower proposal is secondary to the diversion of water pursuant to Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00. As conditioned, the permit does not place an additional legal demand on the source. Accordingly, the Applicant has proven by proven by clear and convincing evidence that water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the Department and other evidence provided to the Department. §85-2-311(3), MCA. (FOF 25-29)

### Adverse Effect

### FINDINGS OF FACT

32. The Applicant's plan to prevent adverse effect to water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation is to only exercise this hydropower permit simultaneously and secondary to Statements of Claim No. 41K 40870-00, 41K 40871-00 and 41K 40872-00 owned by BOR and the Applicant. The proposed hydropower

generation will occur only when the existing rights are being utilized, and thus, the hydropower use will not in any way increase the burden on the source.

33. Under the proposed use, flows diverted from the Pishkun Supply Canal will be routed by steel feeder pipe designed to convey up to 1,400 CFS to the power generation facility and then discharged directly back into the Pishkun Supply Canal immediately below the power generation facility without delay. The project will not cause any new depletions to the source, will not alter historic operations, and will be operated as a “run of the canal” type facility.

34. The project incorporates two systems to ensure uninterrupted delivery of water to down canal users. The automatic head-level control adjusts the turbine flow-through rate in response to changes in water delivery within the Pishkun Supply Canal. This system will prevent any changes in the water levels of the canal. The auxiliary bypass trip weir will provide automatic bypass of water through a parallel drop structure if curtailment of hydropower use becomes necessary.

35. The Department finds that water can only be used for hydropower when SOC's 41K 40870-00, 41K 40871-00 and 41K 40872-00, upon which this permit will be entirely dependent, are in priority and that the water rights are capable of being operated in a manner consistent with priority administration on the source.

36. The Department further finds that the proposed appropriation will not cause an adverse effect because according to the Applicant's plan, the proposed new use is non-consumptive and is only utilizing water already appropriated under Statements of Claim No. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

#### CONCLUSIONS OF LAW

37. Pursuant to § 85-2-311(1)(b) and (3), MCA, the Applicant bears the affirmative burden of proving by clear and convincing evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the

water will be controlled so the water right of a prior appropriator will be satisfied. See Montana Power Co. (1984), 211 Mont. 91, 685 P.2d 336 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick Properties, Inc. ¶ 21.

38. As described above, the Applicant's proposal is not an additional legal demand on the source. Nonetheless, the Applicant demonstrated that to the extent necessitated, water can bypass the hydropower facility. As conditioned, the Applicant has proven by clear and convincing evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. § 85-2-311(3), MCA. (FOF 32-36)

### **Adequate Diversion**

#### **FINDINGS OF FACT**

39. During operation of the power generation facility, a by-pass weir structure at the top of the Arnold Coulee drop structure would be closed, preventing water from entering the drops and establishing the power head. The by-pass weir consists of a long-crested weir and emergency by-pass gate that maintains a constant diversion or power head. Any water beyond that which can be accommodated by the powerplant simply spills over the by-pass weir and continues down the parallel drop structure.

40. The power intake structure calms and trains the water entering the dual penstocks; each penstock is connected to a single, turbine-generator set. The power intake structure also includes dual gates so one penstock and turbine can be isolated if necessary for mid-season repairs. The turbines, generators, and all related controls are housed in the powerhouse. The turbines are self-regulating in that the wicket gates will throttle the power generation depending on the flow in the Pishkun Supply Canal to maximize power generation.

41. The water emerges for each axial flow turbine via a draft tube elbow that redirects the water flow from downward vertical to horizontal into the tailrace channel. This channel has an earthen canal prism which calms the water as it reemerges with the Pishkun Supply Canal. According to the information provided by the Applicant, the facility is designed to utilize flows

for power generation up to 1,400 CFS which is the maximum capacity of power generation facility based on the system limits of the Pishkun Supply Canal.

42. A licensed engineer familiar with power generation facilities has designed the diversion works. The Applicant provided preliminary construction drawings which show the proposed intake structure on the Pishkun Supply Canal, the penstock, and the terminal powerhouse.

43. The Department finds that the design of the diversion works is adequate for the proposed hydropower use.

### CONCLUSIONS OF LAW

44. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate.

45. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource. *In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

46. Applicant has proven by clear and convincing evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. § 85-2-311(3), MCA (FOF 39-43).

### Beneficial Use

### FINDINGS OF FACT

47. The Applicant is requesting a flow rate of 1,400 CFS up to a volume of 591,330.6 AF for the purpose of power generation capacity of 3 megawatts and a projected annual energy production of 6,000 megawatt hours. The power generation use is identified as a beneficial use pursuant to §85-2-102(5)(a), MCA.

48. The existing Sun River siphon where the Pishkun Supply Canal crosses under the river is the limiting factor with respect to maximum canal discharge and canal flow. The siphon has an



operational limitation of 1,400 CFS. The proposed hydropower facility is designed to utilize up to 1,400 CFS of the system capacity for the purpose of power generation. The volume of 591,330.6 of volume is calculated based on a continuous flowrate of 1,400 CFS over the 213-day period of use (213 days x 1,400 x 1.983 acre-feet per day).

49. The proposed power generation project would allow the Applicant to benefit by the sale of electricity to local energy distributors.

### CONCLUSIONS OF LAW

50. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource. *In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

51. Applicant proposes to use water for power generation which is a recognized beneficial use. § 85-2-102(5), MCA. The Applicant has proven by clear and convincing evidence power generation is a beneficial use and that 1,400 CFS of diverted volume and 591,330.6 acre-feet of water requested is the amount needed to sustain the beneficial use. § 85-2-311(1)(d) and (3), MCA. (FOF 47-49)

### Possessory Interest

#### FINDINGS OF FACT

52. The Applicant signed the application form affirming the Applicant has possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use.

53. The proposed project is located on federally owned land. The U.S. Bureau of Reclamation provided written approval to the Applicant assigning possessory interest in hydropower use place of use. A copy of this written approval is included in the Application materials.

## CONCLUSIONS OF LAW

54. Pursuant to § 85-2-311(1)(e), MCA, an Applicant must prove by a preponderance of the evidence that it has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use,

55. The Applicant has proven by clear and convincing evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. § 85-2-311(1)(e) and (3), MCA. (FOF 52-53)

## **REASONABLE USE CRITERIA**

### GENERAL CONCLUSIONS OF LAW

56. The Department may not issue a beneficial water use permit for an appropriation of 4,000 or more acre-feet of water a year and 5.5 or more cubic feet per second of water unless the appropriator proves by clear and convincing evidence that the proposed appropriation is a reasonable use. § 85-2-311(3)(b), MCA. A finding of reasonable use must be based on a consideration of the following criteria found in § 85-2-311(3)(b)(i)-(vi), MCA.

### **(3)(b)(i) Existing and Projected Demands on the State Water Supply**

57. The Applicant must prove the appropriation is a reasonable use based on a consideration of the existing demands on the state water supply, as well as projected demands, such as reservations of water for future beneficial purposes, including municipal water supplies, irrigation systems, and minimum stream flows for the protection of existing water rights and aquatic life.

### FINDINGS OF FACT

58. The Sun River basin, which includes the proposed project area, is closed to some types of new water appropriation due to water availability problems, water contamination problems and/or a concern for protecting existing water rights § 85-2-342 and -343, MCA. The Sun River is part of the Upper Missouri River Basin, which was temporarily closed by legislative authority

on April 16, 1993. The closure is temporary until final decrees have been issued for all the subbasins of the Upper Missouri River basin. non-consumptive water uses are an exception to the closure statute. The proposed appropriation is non-consumptive.

59. Existing demands on the state water supply were considered as well as projected demands such as reservations of water for future beneficial purposes, including municipal water supplies, irrigation systems, and minimum stream flows for the protection of existing water rights and aquatic life were considered by the Department. As such, The Department finds that because the proposed use of water is non-consumptive, no impacts will occur.

60. The Department finds that the proposed appropriation will not cause an effect on the quantity of water for existing beneficial uses in the source of supply because the proposed new use is non-consumptive and, as conditioned in this Preliminary Determination, is utilizing water already appropriated under existing water rights.

61. The proposed appropriation is for power generation and the use of water is non-consumptive. The new use of water will not further deplete stream flows found in the source of supply.

### **(3)(b)(ii) Benefits to the Applicant and the State of Montana**

62. The Applicant must prove the appropriation is a reasonable use based on a consideration of the benefits to the Applicant and the State of Montana.

### **FINDINGS OF FACT**

63. The public benefits include producing clean, renewable green energy with a zero-carbon footprint. The proposed site capacity is 3 MWs and the projected annual energy production is approximately 6,000 MW-hrs. In theory, this project lowers global greenhouse gas emissions while reducing the impact of climate change. Also, replacing this failing drop structure with the proposed hydropower generation facility and using the revenue stream generated will be used to replace other aging infrastructure. This will help ensure the viability and sustainability of Greenfields Irrigation District, its 550 water users, as well as 83,000+ acres of irrigated agricultural production. With respect to the public, this helps ensure food quality, quantity, and

cost-effectiveness. This also bolsters the public coffers by increasing the tax base for the State, Teton County, and Cascade County. For the Applicant (GID), the benefit is that an aging component of GID's infrastructure is replaced with a new hydropower generation facility and the revenue stream generated from the selling of the electricity will help the Applicant facilitate and expedite the replacement of other aging infrastructure.

64. The Department finds that the proposed project will be a benefit to the Applicant and the State of Montana.

**(3)(b)(iii) Effects on Quantity and Quality of Water for Existing Beneficial Uses in the Source of Supply**

65. The Applicant must prove the appropriation is a reasonable use based on a consideration of the effects on the quantity and quality of water for existing beneficial uses in the source of supply.

**FINDINGS OF FACT**

**Water Quantity**

66. The proposed project will have no effect on the timing and amount of water flowing in the Pishkun Supply Canal or the Sun River. The only portions of the canal system that will experience changed flow are the concrete drop structures. Flows more than 1,400 CFS will not be secondarily diverted to the power plants and this excess water will bypass the hydropower plants and flow through a proposed parallel drop structure. The powerhouses and tailrace canals will be located close to the bottom of the flumes so that the proposed stilling basins will have the same water level with or without the hydropower projects. No water will be consumed. Flows at the bottom of each drop structure will be the same with or without the proposed power generation development.

67. The Department finds that the proposed appropriation will not cause an effect on the quantity of water for existing beneficial uses in the source of supply because the proposed new use is non-consumptive and is utilizing water already appropriated under Statements of Claim owned and operated by the Applicant.

**Water Quality**

68. In 1988, the USGS performed a reconnaissance study of water quality associated with irrigation drainage within the Sun River Irrigation Project. The USGS study concluded that surface water within the irrigation system met applicable water quality standards for toxic constituents. However, dissolved solids in downstream water were observed to increase 3 to 4 times above the levels observed for water flowing into the Sun River Project. The Applicant provides that subsequent water quality sampling in the Greenfield Main Canal located downstream from the proposed power generation place of use is consistent with the 1988 samples. All available water quality data to date is included in the application file.

69. The Pishkun Supply Canal where the proposed project is to be located ultimately discharges into Muddy Creek. High sediment loads and an increase in suspended solids below the Muddy Creek discharge point have presented a water quality and environmental degradation problem. The problem is the result of general Muddy Creek streambed characteristics (geology, soils, topography, etc.) which are conducive to the occurrence of natural sedimentation problems. This water quality problem is currently being assessed and evaluated by numerous state and local agencies. The proposed project will not affect this water quality problem since the proposed project is not changing the quantity or timing of water releases to Muddy Creek.

70. The Department finds there will be no effects on the quantity or quality of water for existing beneficial uses in the source of supply.

#### **(3)(b)(iv) Availability and Feasibility of Using Low-Quality Water**

71. The applicant must the appropriation is a reasonable use based on a consideration of the availability and feasibility of using low-quality water for the purpose for which application has been made.

#### **FINDINGS OF FACT**

72. The project could use low-quality water if it were present in the Pishkun Supply Canal. Project operations do not depend on water quality. However, because of the location of the drop structures, which is the location of the proposed power generation project, it can only use the water that flows through these structures, and no other source of water may be used.

73. The Department finds the existing source of water to be the only alternative for the proposed use, and there is no availability or feasibility of using lower-quality water.

**(3)(b)(v) Effects on Private Property Rights by any Creation of or Contribution to Saline Seep**

74. The applicant must prove the appropriation is a reasonable use based on a consideration of the effects on private property rights by any creation of or contribution to saline seep.

**FINDINGS OF FACT**

75. The project would utilize only existing surface water from the Sun River via the Pishkun Supply Canal for a non-consumptive use and would not create or contribute to any saline seeps.

76. The Department finds that the proposed power generation project will not affect private property rights by any creation of or contribution to saline seep because the materials used in the construction of the proposed project are impervious.

**(3)(b)(vi) Probable Significant Adverse Environmental Impacts of the Proposed Use of Water**

77. The applicant must prove the appropriation is a reasonable use based on a consideration of the probable significant adverse environmental impacts of the proposed use of water as determined by the Department pursuant to Title 75, chapter 1, or Title 75, chapter 20.

**FINDINGS OF FACT**

78. The Applicant provides that partial funding for this project includes a federal grant and a loan from the Montana Dept. of Commerce. Also, modifications will be made to Reclamation-owned structures. These conditions warrant that environmental and cultural resource compliance documents must be prepared and approved prior to starting the project. The Applicant contends that the probability of significant adverse environmental impacts is very low given the level the Federal and State agency involvement.

79. The Department finds that there are no significant adverse environmental impacts associated with the hydropower projects as identified because mitigation plans would have to be developed for any potential adverse effects identified and reviewed and approved by Federal and State agencies.

## CONCLUSION OF LAW

80. Based upon Findings of Fact Nos. 57-79, the Department concludes that the Applicant has proven by clear and convincing evidence that the proposed appropriation is a reasonable use based on consideration of the factors set forth in §85-2-311(3)(b)(i-vi), MCA.

### **PRELIMINARY DETERMINATION**

Subject to the terms, analysis, and conditions in this Order, the Department preliminarily determines that this Application for Beneficial Water Use Permit No. 41K 30156171 should be **GRANTED AS CONDITIONED.**

The Department determines the applicant may beneficially use water at a maximum flow rate of 1,400 CFS up to 591,330.6 acre-feet, from the point of diversion in the NWSE of Section 36, T22N, R9W Lewis and Clark County, for power generation use from April 1 – October 31. The place of use is located at SWNW of Section 13, T22N, R8W Teton County. The project completion period is expected to be five years from the issuance of a beneficial water use permit by the Department.

Any permit granted to the Applicant will be subject to the following conditions, limitations, or restrictions:

1. The flow rate, volume and timing of water used for hydropower generation pursuant to this permit is secondary and entirely dependent on U.S. Bureau of Reclamation and Greenfields Irrigation District diversion of water for irrigation in accordance with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.
2. The volume and flow rate for this permit are concurrent with the authorized flow rate and volume associated with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.

3. The flow rate and volume for this permit does not authorize the diversion of water exceeding that amount of water necessary for Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00.
4. Basin Closure Information: This permit is subject to the condition that the timing and quantity of water available will be at the sole discretion of the U.S. Bureau of Reclamation and Greenfields Irrigation District in accordance with Water Right Statements of Claim Nos. 41K 40870-00, 41K 40871-00 and 41K 40872-00. Power generation may only occur as a result of the appropriation of water associated with 41K 40870-00, 41K 40871-00 and 41K 40872-00 for this use to be considered non-consumptive pursuant to §85-2-343 (2)(b), MCA.



### **NOTICE**

This Department will provide public notice of this Application and the Department's Preliminary Determination to Grant pursuant to §§ 85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant the permit or change in appropriation right, the department will grant the permit or change subject to conditions necessary to satisfy applicable criteria.

DATED this 10<sup>th</sup> day of April 2023.

/Original signed by Matt Miles/

Matt Miles, Manager

Havre Regional Office

Department of Natural Resources and Conservation

**CERTIFICATE OF SERVICE**

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 10<sup>th</sup> day of April 2023, by first class United States mail.

GREENFIELDS IRRIGATION DISTRICT

PO BOX 157

FAIRFIELD, MT 59436

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NAME

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DATE